

Abstract:

A method of fabricating an organic optoelectronic device having a bulk heterojunction comprises the steps of: depositing a first layer over a first electrode by organic vapor phase deposition, wherein the first layer comprises a first organic small molecule material; depositing a second layer on the first layer such that the second layer is in physical contact with the first layer, wherein the interface of the second layer on the first layer forms a bulk heterojunction; and depositing a second electrode over the second layer to form the optoelectronic device. In another embodiment, a first layer having protrusions is deposited over the first electrode, wherein the first layer comprises a first organic small molecule material. For example, when the first layer is an electron donor layer, the first electrode is an anode, the second layer is an electron acceptor layer, and the second electrode is a cathode. As a further example, when the first layer is an electron acceptor layer, the first electrode is a cathode, the second layer is an electron donor layer, and the second electrode is an anode.